determining a location on said housing which may build up stress during a reflow process employing heat in which the plurality of separate surface mount contacts connect said housing to a substrate; and

removing a portion of the housing extending substantially perpendicular to a surface of the housing at said location.

29. (Newly Added) The method according to claim 28, wherein said location is generally furthest from a neutral point of the connector.

30. (Newly Added) The method according to claim 28, wherein said location is located to absorb stress and accommodate warp.

31. (Newly Added) The method according to claim 28, wherein the portion is one of a slot and a notch.

REMARKS

Claims 1, 4-8, 10-16, and 19-21 are pending in the present application. Claims 1, 4-8, 10-16, and 19-21 have been rejected. Claims 1, 4-8, 10-16, and 19-21 have been cancelled. Applicants maintain the patentability of claims 1, 4-8, 10-16, and 19-21 and have cancelled these claims for the sole purpose of expediting prosecution of this application. New claims 22-31 have been added.

All previous claims have been cancelled in favor of new claims 22-31, which were drafted around the Examiner's concerns about the Applicant's Admitted Prior Art (APA), Walker, and McHugh, which, as Applicant as has stated in previous responses, do not, either alone, or in any combination, render the instant invention unpatentable.

The APA requires little comment here since it admittedly lacks the features of the invention, hence the Examiner's need to apply or add Walker and/or McHugh.

This leads us to Walker. The Examiner places great credence on what he labels "E1" in Figure 1 of Walker. The Examiner states that E1 of Walker is furthest from Walker's neutral point, would inherently obtain the advantage of preventing warpage because it is capable of doing so, and

therefor alleges that certain claims of the previous amendment were obvious over the APA in view of Walker.

However, even before considering the language of the newly presented claims, as mentioned in Applicant's previous response, the combination of the APA and Walker is simply not a valid combination. The APA is a "board-to-board" type of connector employing surface mount connecting techniques that typically require high co-planarity, reflow ovens, etc., for mounting. The very fact that this connector must go through the reflow oven is where the appreciation of the need for this invention arose.

Walker is a completely different type of connector faced with completely different issues. First, Walker is a through-hole connector as indicated by solder tails 76. Co-planarity is not nearly as critical in such a connector. Nor are reflow ovens used.

One skilled in the art, faced with complex co-planarity problems and coefficient of thermal expansion (CTE) mis-match problems in a board-to-board connector such as disclosed in the APA would never look to a low-tech (relative to the APA) through hole connector such as Walker that does not face any of the same problems. Thus, for at least this reason, the combination of the two must fail.

Second, even if one skilled in the art would look to the general technological field of Walker, they would learn absolutely nothing. The reason the Examiner has to label the "notch" of Walker "E1" is because Walker does not label it anything. Indeed, Walker is absolutely silent to why that "notch" is there and what purpose it serves.

To think that one skilled in the art would look at Walker and actually incorporate a blind "teaching" is just not reasonable.

The Examiner states Walker's "notch" is inherently capable of preventing warpage. There is absolutely nothing in Walker to support that conclusion. Indeed, notch E1 can be a manifestation of the manufacturing of the part, i.e., positioning tool placement. Furthermore, there is no reason not to believe all the notches must be present together. The absolute silence of Walker places too many doubts as to the "teaching".

Claims 22-31 have been newly added, and include claim language directed to a surface mount reflow process employing heat (e.g., specification, as originally filed, page 4, line 28 -page 5,

line 3). Areas of reduced rigidity are provided, with each area of reduced rigidity comprising a notch or a slot that extends substantially perpendicular to a surface of the housing. Each notch or slot reduces stress caused by CTE differential or mismatch, thereby accommodating connector warp during and after the reflow process.

As noted above, Walker is unrelated to a connector that is involved in a reflow process employing heat. Walker is a through-hole connector in which co-planarity is not critical.

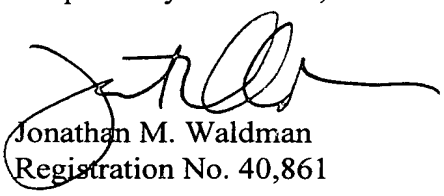
Similarly, the slots 38 in the plug connector 10 of McHugh are unrelated to a reflow process employing heat, and are instead merely related to a tolerance space.

Thus, claims 22-31 are patentable for the reasons set forth above.

In view of the foregoing amendments and remarks, Applicants submit that the above-identified application is in condition for allowance. Early notification to this effect is respectfully requested.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made."

Respectfully submitted,



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Version With Markings To Show Changes Made

Please cancel claims 1, 4-8, 10-16, and 19-21.

Please add the following new claims 22-31:

22. (Newly Added) An electrical connector, comprising:

a housing including a peripheral wall surrounding and rising above an array of contact receiving passageways and having a perimeter edge;

a plurality of separate surface mount contacts for connecting said housing to a substrate by a reflow process employing heat; and

areas of reduced rigidity in portions of said peripheral wall of the housing at which stress builds up due to the heat of the reflow process, each of the areas of reduced rigidity comprising portions of removed housing extending substantially perpendicular to a surface of the housing and extending through a distal end of said peripheral wall of the housing from an inner face to an outer face of the peripheral wall;

such that said areas of reduced rigidity contribute to said plurality of separate surface mount contacts better retaining their co-planarity during and after the reflow process.

23. (Newly Added) The electrical connector according to claim 22, wherein the areas of reduced rigidity in the housing are located at positions furthest from a neutral point of the connector.

24. (Newly Added) The electrical connector according to claim 22, wherein each of the areas of reduced rigidity comprises one of a notch and a slot.

25. (Newly Added) The electrical connector according to claim 22, wherein the areas of reduced rigidity are disposed to absorb stress and accommodate warp.

26. (Newly Added) The electrical connector according to claim 22, wherein the housing is made from a dielectric material.

27. (Newly Added) The electrical connector according to claim 22, wherein the plurality of separate surface mount contacts comprise solder balls.

28. (Newly Added) A method of reducing rigidity in a housing of an electrical connector having a plurality of separate surface mount contacts, comprising:

determining a location on said housing which may build up stress during a reflow process employing heat in which the plurality of separate surface mount contacts connect said housing to a substrate; and

removing a portion of the housing extending substantially perpendicular to a surface of the housing at said location.

29. (Newly Added) The method according to claim 28, wherein said location is generally furthest from a neutral point of the connector.

30. (Newly Added) The method according to claim 28, wherein said location is located to absorb stress and accommodate warp.

31. (Newly Added) The method according to claim 28, wherein the portion is one of a slot and a notch.